ILLINOIS' FORGOTTEN MIDDLE-SKILL JOBS

MEETING THE DEMANDS OF A 21ST-CENTURY ECONOMY

SEPTEMBER 2008

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ACKNOWLEDGMENTS

Illinois' Forgotten Middle-Skill Jobs was written for the Skills2Compete-Illinois campaign by The Workforce Alliance (TWA), Washington, D.C., as part of its national Skills2Compete Campaign. The primary authors are Kermit Kaleba and Andrea Mayo. The national version of this report, *America's Forgotten Middle-Skill Jobs*, is available at www.Skills2Compete.org. To learn more about the Skills2Compete-Illinois campaign, go to www.Skills2Compete.org/Illinois.

We gratefully acknowledge support for this report by The Joyce Foundation and the Woods Fund of Chicago.

Skills2Compete-Illinois Campaign

State Leads

Jenny Wittner
Women Employed

Jeffrey Allington and Carrie Thomas
Chicago Jobs Council

Andrea Ray
The Workforce Alliance

Core Advisors

Jeff McCourt
Good Jobs First - Illinois

Michael Monaghan
Illinois Community College Trustees Association

Ray Prendergast
Jane Addams Resource Corporation

Phyllis Russell
Power Transmission Distributors Association Foundation

Amy Sherman
Council for Adult and Experiential Learning

Lisa Thakkar and Fred Tsao
Illinois Coalition for Immigrant and Refugee Rights

David Thigpen
Chicago Urban League

Jerry Weber
Kankakee Community College

Michael Williams
Illinois Workforce Partnership

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INTRODUCTION

Illinois has long enjoyed a reputation as an economic powerhouse, with globally recognized businesses producing cutting edge technologies and high-value services. The numbers speak for themselves: With a gross state product of more than $600 billion in 2007, Illinois has the fifth largest state economy in the nation[1], and the state has 33 companies ranked in the Fortune 500.[2] Illinois recently ranked among the top third of states in a recent Kauffman Foundation report about states best positioned to succeed in the new economy.[3]

There's no question that our highly skilled workforce has played a key role in our state's growth and success in recent decades, and we have much to be proud of in terms of educational attainment. Three of the top forty universities in the nation are located in Illinois.[4] According to the 2000 census, the percentage of Illinoisans with four-year or advanced college degrees exceeded the national average, and nearly 54 percent of Illinoisans had completed some education beyond high school.[5] This latter figure is noteworthy because middle-skill jobs—those that require more than a high school diploma, but less than a four-year degree—make up the most significant segment of our total labor market, and will continue to do so for the foreseeable future.

However, there are gathering clouds on our horizon. **Illinois is already beginning to experience shortages of the middle-skill workers that are so critical to our economic success**, and businesses across the state are reporting the negative impact of these shortfalls on their productivity and growth. To maintain our edge in an increasingly competitive global economy, Illinois must invest in both high- and middle-skill workers to ensure our businesses have the talent they need.

Illinois has taken promising steps in this direction. In 2003, the state launched the Critical Skill Shortages Initiative (CSSI), which was designed to provide support for developing more skilled workers in the healthcare, manufacturing, and transportation-distribution-logistics sectors. More than 4,000 individuals have received training toward skilled occupations such as registered nurse or machinist under the initiative. The Illinois Shifting Gears Initiative, launched in 2007 and led by the Illinois Community College Board, is working to make Illinois' educational pipeline seamless for adults who want to gain the skills needed in these key industries.[6] And in 2005 Governor Blagojevich created the New Americans Policy Council to help identify best practices in helping immigrants—currently representing nearly 15 percent of the state's aggregate workforce—acquire the skills they need to integrate and succeed in their communities and in the labor market.

These efforts are a solid beginning. But Illinois needs to develop a bolder and broader vision to address the educational and economic challenges facing our state. Illinois should set a truly transformative goal: guaranteed access to the equivalent of at least two years of education or training past high school—leading to a vocational credential, industry certification, or one's first two years of college—as well as access to the basic skills needed to pursue such education. As we discuss in this paper, there are precedents for resetting the bar for educational attainment, and there is strong evidence that such human capital investments yield substantial dividends for both workers and businesses.

ILLINOIS' FORGOTTEN MIDDLE-SKILL JOBS

Conventional wisdom holds that our nation is headed for—or perhaps already experiencing—an "hourglass" or "dumbbell" economy: a bifurcated labor market with a small number of highly skilled, highly paid workers and a much larger number of low-skill, low-paid workers. Within such a model, middle-skill occupations—the jobs that fueled the expansion of the world's largest economy and provided the foundation for a robust American middle class—are on the verge of extinction.

It's a bleak picture, to be sure. It's also a myth.

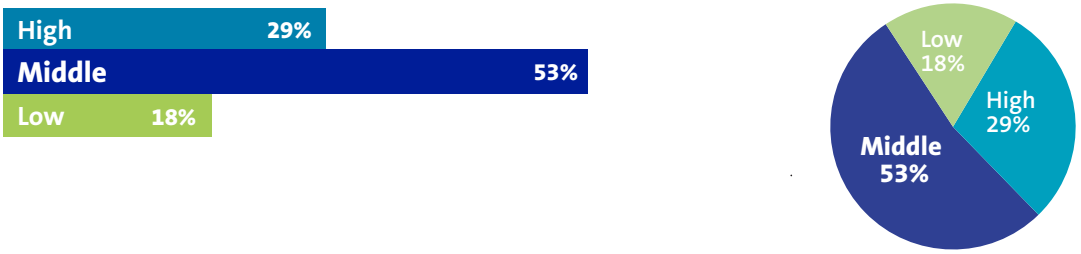
The truth is that **middle-skill jobs, which require more than a high school education but less than a four-year degree, currently make up the largest segment of jobs in our economy, and will continue to do so for years to come**. According to a recent report by economists Harry Holzer and Robert Lerman for the national Skills2Compete campaign, while middle-skill jobs have declined slightly as a portion of total employment, roughly half of all employment today is still in middle-skill occupations. And nearly half (about 45 percent) of all job openings between 2004 and 2014 will be at the middle-skill level. This compares with one-third of job openings in high-skill occupational categories and 22 percent in occupations requiring no more than a high school degree.[7]

The national picture holds true in Illinois, as well—in fact, middle-skill jobs are an even greater portion of the state's labor market than the nation as a whole. More than half of Illinois jobs in 2006 were middle-skill jobs, representing more than 3 million workers (Fig. 1, Table 1). The demand for middle-skill workers in the state is expected to increase in the decade between 2004 and 2014, with close to 1 million middle-skill job openings—almost half of all job openings—expected during this time. This compares to low-skill jobs and high-skill jobs, which will account for 23 and 30 percent of openings respectively (Fig. 2, Table 2).

Despite these numbers, policymakers at both the federal and state levels have increasingly diverted attention and resources away from middle-skill jobs, and the education and training investments needed to ensure that workers have the skills they need to succeed in these vital occupations. This represents a lost opportunity to invest in our economic future.

Demand for Middle-Skill Jobs is Strong, Will Remain Strong in Illinois

FIGURE 1. Illinois Jobs by Skill Level, 2006



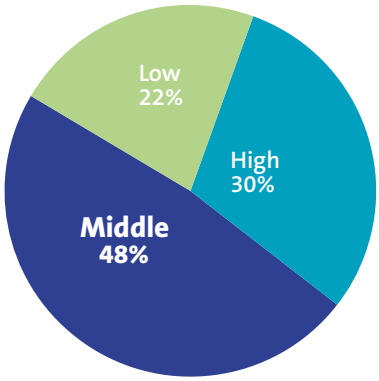
Source: Calculated by TWA from the Bureau of Labor Statistics website

TABLE 1. Illinois Jobs by Skill Level, 2006

	Employment	Percent
Total, All Occupations	5,826,660	100.0%
Management	250,790	4.3%
Business & Financial	305,860	5.2%
Professional and Related	1,117,410	19.2%
Total, High Skill	*1,674,060*	*28.7%*
Sales and Related	622,590	10.7%
Office and Administrative Support	1,004,380	17.2%
Construction	240,910	4.1%
Installation and Repair	210,810	3.6%
Production	530,540	9.1%
Transportation and Material Moving	478,240	8.2%
Total, Middle Skill	*3,087,470*	*53.0%*
Service Occupations	1,060,120	18.2%
Farming/Fishing/Forestry Occupations	5,000	0.1%
Total, Low Skill	*1,065,120*	*18.3%*

Source: Calculated by TWA from the Bureau of Labor Statistics website

FIGURE 2. Illinois' Total Job Openings by Skill Level, 2004-2014



Source: Calculated by TWA from Illinois Department of Employment Security data.

TABLE 2. Illinois Jobs and Total Job Openings by Skill Level, 2004-2014

	Employment		Job Openings	
	2004	2014	Number	%
Total, All Occupations	**6,264,242**	**6,802,491**	**2,096,25**	**100.0%**
Management	443,718	477,746	112,120	5.3%
Business & Financial	300,772	348,431	100,840	4.8%
Professional and Related	1,192,240	1,383,170	424,800	20.3%
Total, High Skill	***1,936,730***	***2,209,347***	***637,760***	***30.4%***
Sales and Related	650,517	684,098	247,270	11.8%
Office and Administrative Support	1,022,463	1,027,431	280,330	13.4%
Construction	275,197	307,396	86,050	4.1%
Installation and Repair	218,571	235,011	67,250	3.2%
Production	517,967	506,768	137,020	6.5%
Transportation and Material Moving	502,394	549,283	169,530	8.1%
Total, Middle Skill	***3,187,109***	***3,309,987***	***987,450***	***47.1%***
Service Occupations	1,122,372	1,265,577	465,870	22.2%
Farming/Fishing/Forestry Occupations	18,031	17,580	5,170	0.2%
Total, Low Skill	***1,140,403***	***1,283,157***	***471,040***	***22.5%***

Source: Calculated by TWA from Illinois Department of Employment Security data.

HIGHLIGHT

Missing the Roots in the STEM

Policymakers have become increasingly concerned about U.S. global competitiveness in recent years, and a broad consensus has developed about the need for a strong science, technology, engineering, and math (STEM) workforce to support innovation industries and emerging technologies. In particular, business and political leaders have called for increasing the number of students receiving bachelor's or advanced degrees in these fields. The U.S. Congress responded in 2007 with the America COMPETES Act, which authorized $42 billion in federal support for STEM research and education. These investments, along with those made at the state level, will be critical to ensuring that Illinois remains a global leader in the innovation economy.

At the same time, employers are indicating that these highly skilled professionals aren't the only workers in short supply. In fact, there is a significant shortage of the technicians and middle-skill workers needed to implement the new technologies developed by highly skilled innovators. A 2005 National Association of Manufacturers report found that while 35 percent of manufacturers anticipated a shortage of scientists and engineers, 80 percent—more than twice as many respondents—anticipated a shortage of skilled production workers, precisely the kind of middle-skill jobs that require more than high school, but less than a four-year degree.[8] A truly comprehensive innovation agenda will address the demand for both highly educated innovation professionals and the middle-skill workers needed to implement their innovations. These middle-skill workers are at the roots of a successful STEM strategy.

THE FACE OF ILLINOIS' MIDDLE-SKILL JOBS

A middle-skill job requires education or training past high school, but not a four-year degree. But what do these jobs look like? It may be easier to call up a vision of low-skill jobs that require a high school diploma or less, or high-skill professional jobs that require four-year and advanced degrees.

In truth, our communities and state rely on middle-skill jobs. **Middle-skill workers are the police officers and fire fighters who keep us safe in our homes. They are the nurses, therapists and other medical technicians who keep us healthy. They are the air traffic controllers, electricians, and mechanics who keep our infrastructure up and running.** These are local, hands-on jobs, meaning they are unlikely to be outsourced to other countries.

Many of these are well-paid jobs, offering Illinois workers a chance at economic security and prosperity. As illustrated in Table 3, these are jobs with good earning potential. Many offer median earnings that exceed the Illinois overall median for 2006 of $31,637.

Regional research supports the connection between many middle-skill jobs and good wages. For example, a 2006 report from the Illinois Workforce Investment Board's Manufacturing Task Force showed that average annual wages for manufacturing jobs increased by 80 percent between 1990 and 2005, the highest wage increase for any major industry sector over that time period. The task force also found that the average annual wage for manufacturing jobs exceeded $50,000, and the average annual wage rate for such jobs is expected to increase by nearly 4 percent per year through 2010.[9]

A 2007 report, "State of Working Illinois," revealed that more than 60 percent of Illinois workers with "some college," and more than 70 percent of workers with an associate's degree, reported household incomes above $50,000 in 2007. The report further noted that while real wages for most employment sectors declined or stagnated across the state between 2001 and 2007, sectors with strong concentrations of middle-skill jobs—construction, transportation and utilities, education and health services—actually saw increases in earnings over this time period.[10]

At the national level, the data tell a similar story. Between 1997 and 2005, American workers on the whole saw an overall real wage increase of just 5 percent (adjusting for inflation). At the same time, many middle-skill occupations saw significantly higher wage increases.

Of course, not all middle-skill occupations pay well or have meaningful advancement opportunities, confirming the fact that skills are sometimes only part of the economic success equation. But nationally, growth in demand for many middle-skill occupations has been fast enough to generate not only strong employment growth, but also rapid growth in wages.[11]

TABLE 3. Projected Illinois Demand for 30 Middle-Skill Occupations, 2004-2014

	Employment		Net Change		Job Openings	Median Earnings
	2004	2014	Number	%		2006
Computers						
Support Specialists	21,667	25,602	3,935	18.2%	6,600	$43,200
Specialists, Other	12,244	14,040	1,796	14.7%	3,180	$69,400
Construction						
Carpenters	51,126	56,741	5,615	11.0%	13,940	$52,400
Electricians	29,344	32,982	3,638	12.4%	9,440	$61,500
Painters	16,820	18,534	1,714	10.2%	4,280	$39,600
Operating Engineers	9,075	10,183	1,108	12.2%	3,440	$60,300
Plumbers	20,883	24,314	3,431	16.4%	8,230	$66,700
Healthcare						
Dental Hygienists	4,726	6,382	1,656	35.0%	2,060	$63,100
Licensed Practical Nurses	23,612	25,951	2,339	9.9%	7,490	$37,200
Medical Lab Technicians	6,791	7,765	974	14.3%	2,800	$35,600
Physical Therapy Assistants	2,479	3,177	698	28.2%	1,110	$40,600
Radiology Technicians	6,567	7,565	998	15.2%	2,220	$48,400
Registered Nurses	100,053	119,357	19,304	19.3%	40,240	$55,200
Respiratory Therapists	4,181	4,883	702	16.8%	2,080	$45,300
Surgical Technologists	3,605	4,296	691	19.2%	1,160	$38,700
Installation, Maintenance, and Repair						
Aircraft Mechanics	2,741	2,764	23	0.8%	670	$52,600
Auto Mechanics	33,739	38,120	4,381	13.0%	13,360	$34,600
Bus/Truck Mechanics	9,772	10,852	1,080	11.1%	3,590	$41,300
Heating and AC Installers	7,273	8,989	1,716	23.6%	2,680	$42,500
Heavy Equipment Mechanics	2,352	2,462	110	4.7%	620	$47,700
Public Safety						
Emergency Medical Technicians	11,026	13,544	2,518	22.8%	3,780	$26,700
Fire Fighters	16,660	18,965	2,305	13.8%	7,140	$41,700
Police Officers	29,807	31,290	1,483	5.0%	9,200	$59,900
Transportation						
Air Traffic Controllers	1,188	1,303	115	9.7%	420	$134,700
Heavy Truck Driver	75,321	85,661	10,340	13.7%	22,640	$38,500
Other						
Claims Adjusters	12,017	12,862	845	7.0%	2,330	$51,300
Legal Secretaries	12,816	14,542	1,726	13.5%	4,180	$39,400
Machinists	22,095	22,611	516	2.3%	5,670	$34,100
Mechanical Drafters	3,015	3,205	190	6.3%	1,040	$42,500
Paralegals	6,120	7,607	1,487	24.3%	1,980	$43,900

* 2006 median annual earnings for all occupations in Illinois = $31,637

Source: Projections data tabulated using Illinois Department of Employment Security data. Median Earnings data from America's Career Infonet website.

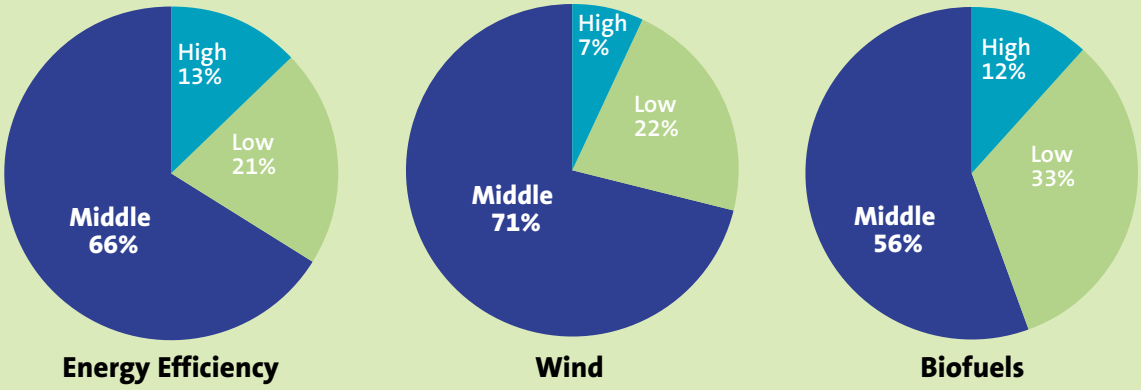
HIGHLIGHT

The Middle of the Green Revolution

More than ever before, policymakers and business leaders are paying attention to clean energy industries and technologies, which promise profound environmental and economic benefits for all Americans. A recent report by the Center on Wisconsin Strategy, the Apollo Alliance, and The Workforce Alliance indicates that the skills needed in the green economy closely mirror the middle-skill demands of the labor market as a whole. "Greener Pathways" examines emerging opportunities in the energy efficiency, wind, and biofuels sectors, and urges stakeholders to scale up green job training by leveraging existing state and local workforce development systems.

Green Jobs are Middle-Skill Jobs

FIGURE 3. U.S. Employment in Green Industries by Skill Level, 2004



Source: Tabulated by TWA from the US Bureau of Labor Statistics website.

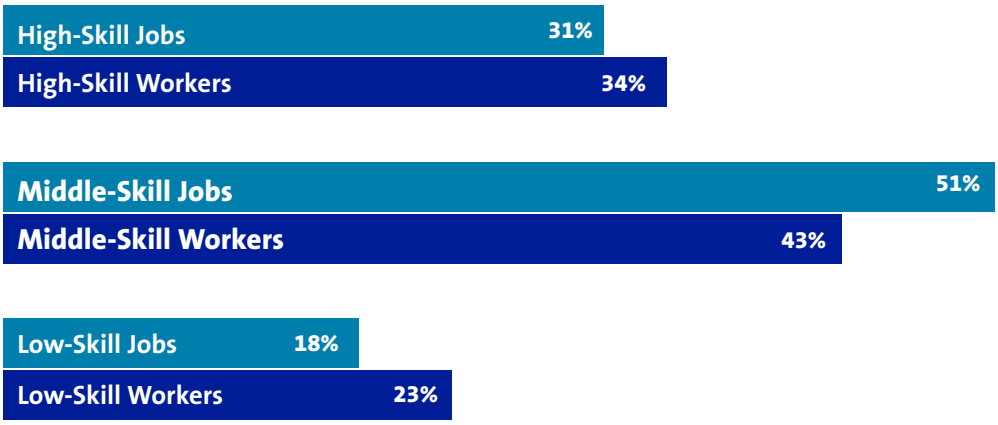
One recent development in Illinois is the formation of the Chicagoland Green Collar Jobs Initiative, which brings together a range of workforce development and other community groups to research green-collar employment opportunities and engage stakeholders in the development of programs to help workers prepare for jobs in the green economy. Wilbur Wright College in Chicago—a partner in the initiative—began offering a six-course, 21-credit hour occupational certificate in Building Energy Technologies in 2006. The curriculum is designed to upgrade the skills of incumbent workers in the building and construction industries by providing instruction in energy efficiency, sustainable construction, and renewable energy technologies. Preliminary surveys of the initial cohort, which graduated in December 2007, indicate that participation in the program is already leading to career advancement opportunities.

ILLINOIS' MIDDLE-SKILL GAP TODAY AND TOMORROW

If middle-skill jobs are going to comprise the main portion of employment and worker-generated economic activity in our state, then Illinois' economic future is dependent in part on ensuring an adequate source of skilled workers to fill those positions. Unfortunately, with the dramatic decreases in support for middle-skill training in this country—and the accelerating retirement of middle-skill workers—the supply of such workers is not meeting current demand in states throughout the U.S. Here in Illinois, 51 percent of all jobs are classified as middle-skill, but only 43 percent of Illinois workers likely have the education and training required to fill these positions. In reality, the gap is likely even greater in particular industries because many workers trained to the middle-skill level may not have the right skills for particular jobs. This means that thousands of well-paid and rewarding jobs are already going unfilled in our state today, in industries that are and will be essential to Illinois' economic portfolio.

Illinois' Skills Mismatch: A Middle-Skill Gap

FIGURE 4. Illinois' Jobs and Workers by Skill Level, 2004



Sources: Illinois Department of Employment Security & US Bureau of the Census

Greater Pain in High Growth Industries

The Illinois' Critical Skill Shortages Initiative (CSSI), launched in 2003, identified three primary sectors in the state facing a shortage of skilled workers: healthcare, manufacturing, and transportation and logistics. In each of these sectors, employers have high-paying job openings available in both the short and long term, but cannot find enough workers with the necessary skills.

The Health Care Task Force of the Illinois Workforce Investment Board (IWIB) reported in 2006 that the state faced a short-term nursing shortage of 10,000 registered nurses, and approximately 1,500 licensed practical nurses.[12] These results were consistent with data from a 2004 survey by

the Illinois Hospital Association, which identified 22 positions at Illinois hospitals with vacancy rates above 7 percent, and suggested that the total number of professional caregivers would actually decline by 4.2 percent between 2000 and 2020. If these numbers hold, this would result in a shortage of 21,000 nurses in the state by the year 2020.[13]

An employer survey conducted for the Metropolitan Workforce Boards of Chicago reveals that inadequate basic and technical skills are significant limitations for employers across a variety of industries and occupations. For example, more than 80 percent of employers in the non-durable manufacturing industry noted that applicants' basic skills were the primary hiring difficulty for heavy and tractor trailer truck drivers, a job that offers a median starting wage of $25 an hour. For cabinetmakers and bench carpenters—positions that start at over $24 per hour—100 percent of employers identified a lack of technical skills as their primary hiring difficulty.[14]

While these shortages certainly limit the productivity and competitiveness of specific firms and industries, there are other reasons for Illinois to worry about a lack of skilled workers. As our population ages, for example, nurses and other healthcare professionals will be increasingly important—and increasingly scarce. Ensuring that we have a sufficient number of workers prepared to take these available jobs, both now and in the future, is an investment not just in our workforce but also in the health and wellbeing of our citizens and our communities.

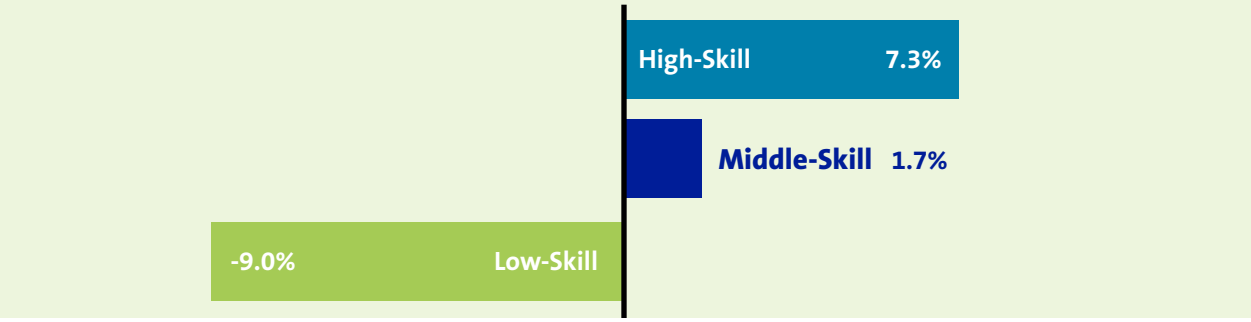
Illinois Educational Projections: A Widening Middle-Skill Gap

Illinois educational projections (Figs. 5 and 6) suggest that the shortage of workers to fill middle-skill jobs is likely to worsen. During the fifteen years between 1989 and 2004, the state saw a growth in residents with educational attainment at the high- and middle-skill levels and a decrease in those at the low-skill level. **But the state will see a significant change in these trends over the subsequent fifteen years, when the proportion of low-skill workers in Illinois' workforce is likely to increase at the same time that the percentage of middle-skill workers is projected to decline.** This trend is due in part to the aging out of middle-skill, blue-collar workers who are less likely to delay retirement than high-skill, white-collar workers. Immigration trends are likely to do little to offset middle-skill attrition, as most workforce growth in the state due to in-migration will likely occur at the low-end of the skill spectrum or at the high-end of the skill spectrum (for example, engineers brought in from overseas through H-1B visas).

These educational, retirement, and immigration trends, if not addressed, will only exacerbate the mismatch between the skill needs of Illinois businesses and the state's available workforce, stifling economic growth and limiting opportunity for thousands of Illinois workers to advance within the state's economy.

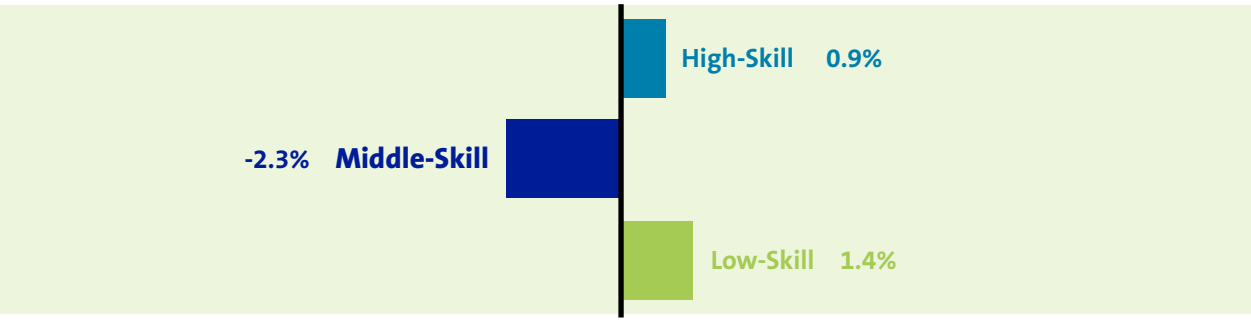
To offset these trends, Illinois must continue to take the type of proactive policy action needed to align its workforce and education resources to better meet the state's labor market demand. This will have to include devoting adequate resources to prepare many more Illinois residents at the low-skill level for middle-skill jobs.

FIGURE 5. Percentage Change in Illinois Educational Attainment, 1989-2004



Source: Calculated by TWA using December 1989 and 2004 CPS data

FIGURE 6. Projected Percentage Change in Illinois Educational Attainment 2004-2020



Source: Current attainment calculated by TWA using December 2004 CPS data. 2020 attainment projected by TWA using demographic data from the December 2005 CPS data and population projections calculated by the Illinois Department of Commerce and Economic Opportunity

TABLE 4. Illinois' Actual and Projected Change in Educational Attainment, 1989 - 2020

	1989	2004	2020	Change 1989-2004	Change 2004-2020
Low-Skill	30.3%	21.3%	22.8%	-9.0%	1.4%
Middle-Skill	41.1%	42.8%	40.5%	1.7%	-2.3%
High-Skill	28.5%	35.8%	36.7%	7.3%	0.9%
Low-Skill	1,822,576	1,360,581	1,700,303	-461,995	339,722
Middle-Skill	2,472,696	2,731,994	3,026,243	259,298	294,249
High-Skill	1,714,528	2,283,724	2,738,129	569,196	454,405
Total	**6,009,800**	**6,376,300**	**7,464,676**	**366,499**	**1,088,377**

Source: Current and past attainment calculated by TWA using December 1989 and 2004 CPS data. Current and past total labor market estimated by the Illinois Department of Employment Security. 2020 attainment projected by TWA using demographic data from the December 2005 CPS data and population projections calculated by the Illinois Department of Commerce and Economic Opportunity.

An Even Greater Basic Skills Crisis?

A major obstacle to addressing Illinois' middle-skill gap is the growing number of residents who are not academically prepared to enter the education and training programs that would prepare them for these jobs. As Holzer and Lerman point out in "America's Forgotten Middle-Skill Jobs," the data supporting education demand projections likely underplays the need for more broadly based basic skills education. The authors note that despite the increases in U.S. educational attainment over the last twenty years, the National Assessment of Adult Literacy (NAAL) indicates only a slight increase in quantitative skills between 1992 and 2003, and no improvement at all for prose and document literacy.

A new report from the National Commission on Adult Literacy (NCAL) confirms that the nation—and Illinois—are facing substantial gaps when it comes to basic skills. NCAL cites evidence that 93 million adults nationally lack the literacy to participate in postsecondary education and training required for the jobs of the future. Tens of millions of Americans face significant educational barriers, including lack of a high school education or inadequate English language skills. Forty percent of all college students and nearly two-thirds of two-year college students must take at least one remedial course.[15]

In 2006, Illinois ranked fourth nationally in the number of individuals enrolled in adult basic and secondary education, and English as a Second Language programs, with nearly 110,000 enrolled in related programs. However, **the report also reveals that more than 350,000 Illinoisans between the ages of 18-64 lacked a high school credential, indicating that we are far from meeting the basic skill attainment levels needed to grow our middle-skill workforce.**

Recognizing these challenges, the Illinois New Americans Policy Council issued a report in June 2008 calling for the state to consider the critical role of immigrants and refugees in developing local and regional economic development strategies.[16] Among other strategies, the Council recommended that the state establish bridge programs and skills training to help connect immigrants and refugees to high-demand jobs, and additional programs to foster entrepreneurship within these communities. While these recommendations were specifically intended to address the needs of immigrants, it is worth noting that such policies can also be of significant value for nonimmigrant populations facing similar basic skill barriers. The Illinois Shifting Gears Initiative is evaluating eight demonstration sites that are implementing bridge or transition programs in adult education and developmental (remedial) education to college-level occupational programs, with results expected beginning in 2009.

CLOSING THE GAP

The Face of Middle-Skill Education and Training

There are a number of vocationally focused education and training programs in Illinois that can help close the state's middle-skill gap. Unlike education for high-skill jobs, which involves college or post-graduate degrees, education for middle-skill jobs can come in many different forms—for example, occupational certifications, associate's degrees, apprenticeship certifications—and in many different settings, including community colleges, community based training organizations, and workplaces.

An associate's degree allows students to enter the workforce immediately upon completion of the degree. Associate's degrees are generally required for occupations such as registered nurse, radiation therapist, and computer specialists. Vocational certificates lead to certification of the knowledge and skills needed to perform the duties of a given occupation, according to regulations or nationally accredited standards. They generally require less classroom time than associate's degrees, offering a path for individuals to develop and verify specific skills sets. They are also extremely useful for individuals already in the workplace as a means of reinforcing existing skills sets and acquiring new skills. Examples of jobs where a vocational certificate could be valuable include dental and legal assistants, auto mechanics, and fire fighters.

Apprenticeships are supervised employment programs that combine classroom instruction and on-the-job training. Generally offered directly by employers or through labor/management partnerships, apprenticeships are usually required for a high-demand career as an electrician, aircraft mechanic, or plumber.

For workers whose basic skills are not at a level that allows them to enter these types of education and training programs, there are program options that teach English and basic reading and math skills in the context of occupational skills. These programs often connect to a specific job that is on a defined career ladder or else to further education that results in a middle-skill credential.

Illinois has a number of exemplary middle-skill education and training opportunities that can serve diverse populations. These are just a few examples:

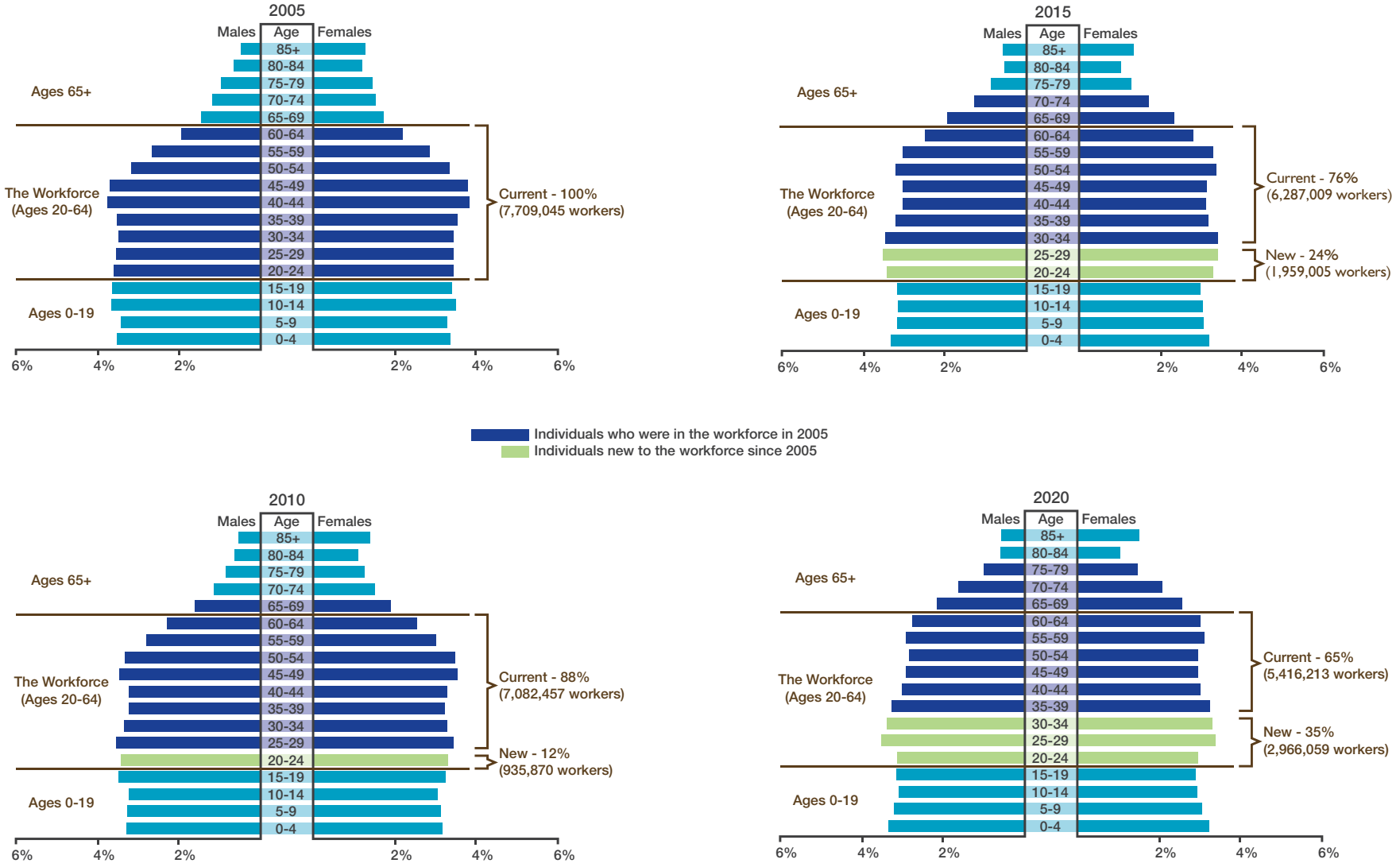
- Job seekers with limited English can enroll in Instituto del Progreso Latino's "Carreras en Salud" program, which offers contextualized language and math instruction to prepare participants for success in Wright College's top-ranked Licensed Practical Nurses program.
- Women seeking family-supporting jobs can establish careers in the skilled trades and succeed in apprenticeships through the Technical Opportunities Project (TOP), a not-for-profit program operated by Chicago Women in Trades.
- For more than fifteen years, new and incumbent workers at ThyssenKrupp Crankshaft Co., LLC in Danville have received training—such as a one-year "Fast Track" degree in industrial maintenance—as part of the auto part supplier's partnership with the Danville Area Community College.
- A single parent attending the nursing program at Kankakee Community College can receive scholarships, which combined with state financial aid, allows the student to focus on the succeeding in this rigorous program. The graduates become registered nurses and earn salaries that can support their families. This partnership between KCC, hospitals, and healthcare systems has grown a qualified nursing workforce and eliminated the shortage of local nurses.

Understanding Illinois' Future Workforce

Clearly, Illinois has a number of options for training people for middle-skill jobs. But in order to reverse the growing middle-skill gap in our state, we must expand access to these programs with a full understanding of the composition of our future workforce. Currently, the majority of public postsecondary education and training resources are devoted to a comparatively small number of young people under the age of 25 who, ultimately, will comprise a minor portion of our state's workforce for the coming decades. In fact, **two-thirds of the people who will be in Illinois' workforce in the year 2020 were already working adults—that is, long past the traditional high school-to-college pipeline—in 2005** (Figure 7, 2020 Pyramid).

If Illinois is going to address the skill gaps on its horizon, we cannot focus education strategies solely on those future workers coming out of high school. We also will need to look at how those adults currently in the workforce—who could benefit significantly from new investments in education and training—can become part of the solution to the middle-skill gap facing our state today and in the years ahead.

FIGURE 7. Current Working Age Illinois Adults in the Current and Projected Population, 2005- 2020



Source: Calculated by TWA using population projections from Illinois Department of Commerce and Economic Opportunity.

A 21st-Century Skill Guarantee

If we are to realize our state's full economic potential, educational access must reflect the demands of a 21st-century economy and the realities of the 21st-century workforce. Given that the largest portion of Illinois jobs are at the middle-skill level and the majority of future workers are already in the workforce today, the Skills2Compete-Illinois campaign supports the following vision for our state:

> *Every working Illinoisan should have access to the equivalent of at least two years of education or training past high school—leading to a vocational credential, industry certification, or one's first two years of college—to be pursued at whatever point and pace makes sense for individual workers and industries. Every person must also have access to the basic skills needed to pursue such education.*

It's an ambitious goal, but not an unprecedented one. Throughout our nation's history, federal and state policymakers have elevated educational guarantees to meet the changing skill requirements brought on by economic and technological change. And, indeed, leaders in Illinois have already taken some steps to address similar challenges here in the 21st century. But there is more to be done.

Historical Precedents

As the nation transitioned from an agricultural economy to an industrial economy in the mid-nineteenth century, policymakers across the United States realized that a broader skill set was required from a much greater segment of the population. This was one important factor in the development of the high school movement to provide a free public education to all citizens. Between 1910 and 1930, the proportion of seventeen-year-olds in secondary education increased from less than 9 percent to 30 percent, fueling the expansion of America's great cities and industries. By the late 1990s, nearly 70 percent of U.S. students were graduating with a high school diploma. Universal secondary education is now understood as one of the fundamental guarantees our society makes to its citizens.

By the middle of the 20th century, society realized that postsecondary education and training would allow the United States to flourish. This was the atmosphere in which the GI Bill was passed in 1944. Between 1944 and 1956, nearly 8 million returning servicemen and servicewomen used the GI Bill. People pursuing four-year college degrees accounted for about a quarter (2.2. million) of those benefiting from the program. But **a much larger—and typically forgotten—number of GIs pursued what we would today recognize as middle-skill training, with 3.5 million enrolled in business or trade school, 1.4 million receiving publicly funded on-the-job training, and nearly 700,000 receiving farm training.** As such, a broad-based investment in middle skills was a big part of our country's post-war prosperity.

State Skill Guarantees

Unfortunately, more recent federal investments in postsecondary education and job training have been in decline. But some forward-thinking states have been making vital commitments to the skills and economic security of their citizens, recognizing that a new minimum level of skills and education should be made available to state residents.

For example, the Georgia HOPE Grant program, funded with lottery proceeds, pays tuition, fees, and up to $300 for books for Georgia residents to earn a certificate approved by the state

Department of Technical and Adult Education (or a comparable program of study approved by the Board of Regents) in a public technical college or public college or university. The HOPE Grant program does not have income- or merit-based criteria for eligibility (although recipients must make satisfactory academic progress while receiving it) and allows part-time attendance. According to the state Department of Technical and Adult Education, enrollment in public technical colleges has increased by 110 percent since the HOPE program began.

In 2007, Michigan Governor Jennifer Granholm announced the creation of the No Worker Left Behind program in her State of the State address. The program, officially launched in August 2007, pays tuition of up to $5,000 per year for two years for 100,000 Michigan workers to pursue a degree or certificate at a community college, university, or other approved training program in a high-demand occupation (determined on a regional basis). The state reprogrammed $40 million in federal funds—primarily from the Workforce Investment Act and Trade Adjustment Assistance programs—to support the initiative. The separate Michigan Promise program guarantees every new high school graduate a $4,000 scholarship for completing two years of postsecondary education at an eligible state institution.

In Washington, the state legislature in 2007 authorized $11.5 million per year for the Opportunity Grant program, which covers tuition for up to 45 academic credits at any state technical or community college, and up to $1,000 per year for books and supplies. Any Washington resident student with a family income at or below 200 percent of the federal poverty level is eligible to participate in the program.

The Opportunity Grant model was constructed to help nontraditional students advance into high-demand, high-wage job opportunities. Opportunity Grants can be used toward completion of credentials, certificates, and apprenticeship programs in occupations where local and regional employer demand exceeds the supply of qualified applicants. Eligible programs must be linked to educational and career pathways, and colleges must demonstrate that there are jobs available for program graduates that pay at least $13 per hour. In addition, schools must demonstrate that local businesses, labor groups, and other community stakeholders are active in supporting the creation or expansion of the program.

The Benefits and Returns of a 21st-Century Skill Guarantee

Anyone who doubts the value of guaranteeing up to two-years of postsecondary education or training needs only to look at the evidence. A recent examination of Illinois' adult learners by the Council for Adult and Experiential Learning (CAEL) and the National Center for Higher Education Management Systems (NCHEMS) found that about 84 percent of adults with an associate's degree and 81 percent of adults with some college (but not a degree) participated in the workforce, compared to only 76 percent of adults with a high school education and 61 percent of adults with less than a high school education. **In addition to higher work participation rates, adults with some college averaged about $240,000 more in lifetime earnings than those with only a high school education, and adults with an associate's degree averaged about $360,000 more in lifetime earnings.**[17]

A May 2007 report prepared for the Illinois Community College Board revealed that the average student exiting Illinois community colleges in Program Year 2005 saw an average earnings gain of $226 per credit hour.[18]

These findings are consistent with those of Holzer and Lerman who found that the median worker with an associate's degree earned about 33 percent more than a worker with only a high school degree, while workers with a bachelor's degree earned about 62 percent more than workers with only a high school degree.[19] These studies indicate not just that postsecondary

education provides a significant earnings advantage for workers, but also that the per-year benefits for workers receiving a two-year degree are comparable to those receiving a four-year degree.

Such a guarantee of access to middle-skill education for all workers would increase productivity and earnings in Illinois. According to the Organization for Economic Co-operation and Development (OECD), each year of postsecondary education leads to an increased per capita output of between 4 and 7 percent.[20] Increasing the average total schooling of a city's population by two years increases the wages of all workers by about 6 percent, regardless of individual educational attainment.[21] And one additional year of schooling leads to an 8.5 percent increase in productivity in the manufacturing sector, and more than a 12 percent productivity increase in other industrial sectors.[22]

A 21st-century skill guarantee for all Illinois workers would also increase public resources. Increasing the number of U.S. adults with more than a high school diploma but less than a baccalaureate degree by 10 percent would increase federal tax revenue by $14 billion,[23] and would save the federal government up to $2,500 per person in reduced reliance on public assistance programs.[24]

CONCLUSION

Middle-skill workers will continue to serve as the backbone of our state economy for years to come. They will continue to repair our roads and bridges, care for our sick and elderly, transport goods, keep our communities safe, and provide a host of other services that we rely on daily. But without sufficient education and training opportunities, our businesses and communities will continue to suffer from a lack of qualified workers, and too many low-income Illinoisans will not have access to the many middle-skill jobs that are going unfilled.

While Illinois has taken some important steps in addressing the growing shortage of middle-skill workers, **it is time for a bold, visionary step that will ensure our place in a 21st-century economy.** At various times in our nation's history, we have adjusted the basic level of education guaranteed to all Americans as a way to adjust to a changing economy and remain competitive. Universal high school and the GI Bill are examples of when we did this with great success in the past. It's time to do it again by guaranteeing that all Illinois residents have access to training for jobs at the middle-skill level.

Having a two-year postsecondary skill guarantee as a guiding vision for Illinois' economic and education policy would provide our workers and businesses with the skills they need to compete in an increasingly competitive global marketplace. There are a number of ways to achieve this goal—and experts from the business and training communities are prepared to roll up their sleeves and make it happen—but it will not happen without strong political leadership and commitment. We urge our policymakers at both the state and federal level to unite around this new vision that a growing number of states are starting to embrace, and champion the policies and strategies necessary to ensure that Illinois remains at the forefront of the innovation economy.

APPENDIX: METHODOLOGY

Table 1 and Figure 1: Data from the Bureau of Labor Statistics[25]. Occupational categories (high, middle, low skill) based on the methodology used in Holzer and Lerman, 2007[26].

Table 2 and Figure 2: Based on occupational projections for 2004-2014 by the Illinois Department of Employment Security[27]. Occupational categories (high, middle, low skill) based on the methodology used in Holzer and Lerman, 2007.

Table 3: Based on occupational projections for 2004-14 by the Illinois Department of Employment Security, using recategorization of occupations according to BLS Education and Training Categories.[28] Jobs requiring at least moderate-term on-the-job training, related work experience, a postsecondary vocational award, or an associate's degree were classified as middle-skill.

Figure 3: Data from the Bureau of Labor Statistics (BLS).[29] Occupations divided into skill levels (high, middle, low) based on educational attainment requirements as defined by BLS. Because BLS does not classify occupations as green jobs, this section of the report assumes that the skills distribution in green jobs is the same as the skills distribution that occurs across all related occupations.

Figure 4: Based on occupational projections for 2004-2014 by the Illinois Department of Employment Security, and 2004 American Community Survey (ACS) data on educational attainment by state[30]. Occupational categories (high, middle, low skill) based on the methodology used in Holzer and Lerman, 2007. Only workers in the labor market and at least 25 years of age (i.e., past traditional school age) are counted.

Figures 5 and 6, and Table 4: Based on Current Population Survey (CPS) data for 1989, 2004, and 2005[31] along with population projection data[32] and labor force estimates[33] by the Illinois Department of Commerce and Economic Opportunity and the Department of Employment Security.

1989, 2004 and 2020 Educational Attainment: Past years educational attaingment data reported only for workers in labor force and aged 25 and over, using CPS data. 2020 projections calculated using static educational attainment model presented in Hanak and Baldasarre, 2005[34]. In that model, educational attainment figures are calculated for the state's current workers (workers aged 25-49 in 2005) for each of 12 different race, ethnicity, gender and age cohorts. Educational attainment for these cohorts is assumed to be static over the ensuing 15 years (2020), and educational attainment for new cohorts of workers (ie, younger than 25 years in 2005) is assumed to mirror that of similar age-race-gender groups today. As such, changing educational attainment throughout the state's population is calculated based on projected demographic changes in the composition of the working population, and does not take into account possible changes in behavior, immigration, et.al.

Creating Skill Categories Using Educational Attainment Data: Skill attainment categories (high, middle, low) for 1989 created using a reclassification of CPS-reported "grades completed" that parallels the educational attainment categories later used by CPS, and reclassified in this table for current and future years using the same method as in Figure 4, p. 11.

Figure 7: Data from long-term population projections (2005 to 2020) by age and gender cohorts, as calculated by the Illinois Department of Commerce and Economic Opportunity.[35] Each cohort was either classified as a "current working age adult" or "not a current working age adult" based solely on age. Current working age was defined as ages 20 to 64.

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